AMENDMENT IN THE SPECIFICATION

Please replace Paragraph 51 with the following:

[0051] In an interferometer, for example, the error can be randomized by shifting the phase offset between measurements. Averaging can then be used to reduce the error source, similar to stochastic noise. The measured phase of the interferometer can be expressed by

$$\phi_{meas} = \phi_{abs} + \varepsilon(\phi_{abs}), \tag{10}$$

where ϕ_{abs} is the absolute phase difference between the reference and test beams, and ε is the measurement error which depends explicitly on the absolute phase. The absolute phase difference can be split into an offset phase ϕ_{off} that is constant over the surface and a spatially varying phase $\phi_{spatial}$ according to

$$\phi_{abs}(x,y) = \phi_{spatial}(x,y) + \phi_{off}, \tag{11}$$

so that

$$\phi_{meas}(x,y) = \phi_{spatial}(x,y) + \phi_{off} + \varepsilon(\phi_{spatial}(x,y) + \phi_{off}). \tag{12}$$

The periodic error signal can be represented by an expansion series about the phase,

$$\varepsilon\left(\phi_{spatial}(x,y) + \phi_{off}\right) = \sum_n a_n \cos\left(n\left(\phi_{spatial}(x,y) + \phi_{off}\right)\right) + b_n \sin\left(n\left(\phi_{spatial}(x,y) + \phi_{off}\right)\right), \tag{13}$$

where a_n and b_n are coefficients that may be generated on the basis of various factors such as smear, channel loss, etc. The subscript n corresponds to a harmonic of the fundamental frequency.